

**TAXONOMIC OVERVIEW OF *LIGUSTRUM* (OLEACEAE)
NATURALIZED IN NORTH AMERICA NORTH OF MEXICO**

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ABSTRACT

A key, morphological descriptions, and basic synonymy are provided for the eight species of *Ligustrum* known to be naturalized in North America north of Mexico: *L. japonicum*, *L. lucidum*, *L. obtusifolium* (including *L. amurense*), *L. ovalifolium*, *L. quihoui*, *L. sinense*, *L. tschonoskii*, and *L. vulgare*. Identifications have been inconsistent particularly between *L. sinense* and *L. vulgare* and between *L. japonicum* and *L. lucidum*. The occurrence of *L. quihoui* outside of cultivation in Arkansas, Mississippi, and Oklahoma is documented. *Phytologia* 91(3): 467-482 (December, 2009).

KEY WORDS: *Ligustrum*, Oleaceae, North America, naturalized, taxonomy

The lustrous, mostly evergreen leaves and masses of white, fragrant flowers make privets popular for landscaping and hedges. Many of the species, however, have become naturalized in the USA and Canada and already have proved to be destructive colonizers, especially in the Southeast. Among the naturalized species, European privet (*Ligustrum vulgare*) is native to Europe and northern Africa; all the rest are native to Asia, mainly China, Japan, and Korea.

Many new species and varieties of *Ligustrum* have been described since overviews of Koehne (1904), Lingelsheim (1920), and Mansfield (1924). The genus in eastern Asia has recently been studied by Chang & Miao (1986), and Qin (2009) has provided a taxonomic overview of the whole genus that recognizes 37 species - divided into five sections based primarily on fruit and seed morphology. In Qin's arrangement, among the North American species, sect. *Ligustrum*

includes *L. obtusifolium*, *L. ovalifolium*, *L. tschonoskii*, and *L. vulgare*; sect. *Lucida* X.K. Qin includes *L. lucidum* and *L. qihoui*; and sect. *Sinensia* X.K. Qin includes *L. japonicum* and *L. sinense*.

Hardin (1974) provided a key covering essentially the same species treated here but his couplets emphasized floral characters, which are often unavailable, and descriptions were not given. Characters of leaf persistence in *Ligustrum* also are difficult to evaluate, since almost all of the species are evergreen to some extent, at least in the southeastern USA. Leaves of some species are unambiguously evergreen, e.g., *Ligustrum japonicum* and *L. lucidum*. In others, leaves are thinner, though they may remain green and persistent through the winter, and are characterized here as "deciduous to half-evergreen" or "half-evergreen to evergreen." Some of the variability in leaf persistence, as well as in other features, within species may reflect genotypic variation among cultivars of different provenance, especially within *L. sinense* (see comments below). Variegated leaves occur in some of the species and many of these forms have been named as varieties or forms or given horticultural designations.

The present overview is provided toward clarification of identifications, nomenclature, and geographical ranges prior to publication of the FNANM treatment of Oleaceae. Citations of states are records from specimens studied, except as specifically noted. Citations of phenology, ecology, and distribution generally follow FNA format. Without having studied types, the synonymy given here reflects apparently unambiguous consensus in literature, unless noted otherwise. The synonymy here is not complete, but no comparable summary appears to be available. Synonymy in Chang & Miao (1986) and Qin (2009) is minimal.

KEY TO *LIGUSTRUM* SPECIES NATURALIZED IN NORTH AMERICA NORTH OF MEXICO

1. Leaves (3-)4-13(-15) cm long.
2. Leaves mostly (3-)4-8(-9) cm, primary lateral veins 3-5 pairs, apex acute to abruptly acuminate, abaxial midvein covered by

epidermis; flowers short-pedicellate on pedicels 0.5–2 mm; corolla tube hardly exerted from calyx and ca. equal lobe length.....

.....1. **Ligustrum japonicum**

2. Leaves (4.5–)6–13(–15) cm, primary lateral veins (5–)6–8 pairs, apex usually long-acuminate, abaxial midvein not covered by epidermis; flowers subsessile on pedicels 0–0.5 mm; corolla tube distinctly exerted from calyx and ca. 2 times longer than lobes

.....2. **Ligustrum lucidum**

1. Leaves 1.5–6(–6.5) cm long.

3. Branchlets completely glabrous, usually glossy

.....6. **Ligustrum ovalifolium**

3. Branchlets minutely hirtellous, hirsute-hirtellous, or hirsutulous, dull.

4. Leaf blades sparsely to moderately hirsutulous to hirsute-strigose on both surfaces, sometimes only along the veins, sometimes mostly near the margins, margins appressed-ciliate, primary lateral veins (5–)6–8 pairs, apices sharply acute and usually at least slightly acuminate, rarely obtuse

.....8. **Ligustrum tschonoskii**

4. Leaf blades glabrous on both surfaces or sometimes sparsely hairy along the abaxial midvein, sometimes minutely and indistinctly hirtellous adaxially, margins glabrous to glabrate, primary lateral veins (2–)3–6 pairs, apices obtuse to acute (*L. vulgare*) or obtuse to rounded, rarely slightly retuse.

5. Leaf blades narrowly oblong-elliptic to oblanceolate-elliptic, oblanceolate or narrowly obovate, usually broadest slightly above the middle; inflorescence usually of stiffly spreading, narrowly cylindric branches, flowers sessile to subsessile in verticil-like clusters

.....3. **Ligustrum quihoui**

5. Leaf blades variously shaped; inflorescence broadly cylindric to pyramidal, flowers sessile to pedicellate in columnar to broadly cylindric or narrowly pyramidal to open-pyramidal panicles of cymes.

6. Inflorescence diffuse and open panicles terminal and on lateral branches interspersed with non-flowering branches; corolla tube slightly shorter than lobes, usually barely exerted from the calyx tube. 4. **Ligustrum sinense**

6. Inflorescence terminal, mostly a compact panicle; corolla tube equal or longer than the lobes, distinctly exerted from the calyx tube.

7. Branchlets hirsute-hirtellous with hairs of uneven length; leaf blade apices asdfasdf; corolla tube 1.5–3 times longer than the lobes

..... 7. **Ligustrum obtusifolium**

7. Branchlets glabrous to evenly and minutely hirtellous to hirsutulous with straight to upcurved hairs of relatively even length; leaf blade apices obtuse to acute; corolla tube equal the lobes or slightly shorter

..... 5. **Ligustrum vulgare**

1. **Ligustrum japonicum** Thunb., Nova Acta Regiae Soc. Sci. Upsal. 3: 207. 1780.

Ligustrum japonicum var. *rotundifolium* Blume, Mus. Bot. Lugd.-Bat. 1: 313. 1850.

Ligustrum coriaceum Carrière, Rev. Hort., 418, plate 56. 1874.

Ligustrum lucidum var. *coriaceum* (Carrière) Decne., Fl. Serres 22: 8. 1877.

Ligustrum japonicum var. *pubescens* G. Koidzumi, Bot. Mag. (Tokyo) 30: 82. 1915.

Ligustrum japonicum var. *crassifolium* Hisauchi, J. Jap. Bot. 11: 848. 1935.

Ligustrum japonicum var. *pricei* (Hayata) T.S. Liu & J.C. Liao, Quart. J. Taiwan Mus. 31: 292. 1978.

Shrubs or small trees 1–4 m. **Branchlets** usually glabrous or sometimes minutely puberulent. **Leaves** evergreen; blades broadly ovate to elliptic-ovate, (3–)4–8(–9) cm x 22–50 mm, glabrous, primary lateral veins 3–4(–5) pairs, abaxial midvein covered by epidermis, apex acute to abruptly acuminate, margins glabrous. **Inflorescence** terminal, broadly pyramidal, 6–15 cm. **Flowers** short-pedicellate, pedicels 0.5–2 mm, glabrous; calyx glabrous; corolla tube equalling or slightly longer

or shorter than lobes, lobes reflexing and not reaching calyx or barely so. **Drupes** globose to oblong or slightly ellipsoid, 7–8 mm; seeds 1–2, endocarp stony, not channeled. $2n = 22, 44, 46$. **Japanese Privet**

Flowering Apr–Jun. Fencerows, lots, woods edges; 10–300 m; Ala., Ark., Fla., Ga., La., Miss., S.C., Tenn., Tex., Va.; native to Japan and Korea; introduced also in West Indies (Puerto Rico), Africa, Australia, Pacific Islands (Hawaii). The PLANTS Database (USDA, NRCS 2009) shows *L. japonicum* in Md. and N.C., and Calflora (www.calflora.org) has records for California.

Ligustrum japonicum occasionally establishes itself outside of cultivation, but it is not nearly as common or invasive, or as fecund, as *L. lucidum*. As noted by Jefferson (1976), *L. japonicum* is hardy into New England, while *L. lucidum* usually is not hardy north of Washington, D.C.

2. **Ligustrum lucidum** W.T. Aiton, Hort. Kew. (ed. 2) 1: 19. 1810.

Ligustrum japonicum var. *macrophyllum* Decne., Fl. Serres 22: 8. 1877.

Shrubs or small trees 2–5+ m. **Branchlets** glabrous. **Leaves** evergreen; blades ovate to elliptic-ovate, ovate-lanceolate, or elliptic, (4.5–)6–13(–15) cm x 25–55(–62) mm, glabrous, primary lateral veins (5–)6–8 pairs, abaxial midvein not covered by epidermis, apex long acute-acuminate or less commonly acute (in smaller leaves), margins glabrous. **Inflorescence** terminal, broadly pyramidal, 7–16(–20) cm. **Flowers** sessile to subsessile, pedicels 0–0.5 mm, glabrous; calyx glabrous; corolla tube about equal or slightly shorter than the lobes. **Drupes** globose to depressed-globose, sometimes curved-obovoid or reniform, 5–9(–10) mm; seeds 1–2(–3), endocarp stony, with several longitudinal channels. $2n = 46$. **Glossy Privet, Broad-leaf privet**

Flowering Apr–Jun. Fencerows, lots, waste areas, deciduous woods, woods edges; 10–300 m; Ala., Ark., Calif., Fla., Ga., La., Md., Miss., N.C., S.C., Tex.; native to China; introduced also in Mexico (Coahuila, San Luis Potosí, Veracruz), West Indies (Puerto Rico), South America (Brazil), Europe (Portugal), Africa, Asia, Australia, Pacific Islands (Hawaii).

In Texas, Louisiana, and southern Arkansas, at least, *Ligustrum lucidum* is becoming a highly invasive weed, commonly seen as multi-stemmed clumps, in Texas commonly up to 4 or 5 meters

tall. Jefferson (1976) included a photo of an arboretum plant in Arcata, California, that appears to be about 15 meters. Collections with small leaves sometimes are misidentified as *L. japonicum*, but blades of smaller leaves of *L. lucidum* are usually more ovate with 5(–6) pairs of lateral veins. Smaller leaves commonly are produced on plants bearing much larger ones.

A recently described variety of *Ligustrum lucidum* from China (var. *xideense* J.L. Liu; Liu 2004) is said to differ from typical plants in its narrower (0.6–3.7 cm wide), lanceolate to elliptic-lanceolate leaves with fewer pairs of primary lateral veins (2–5(–6) pairs).

3. **Ligustrum quihoui** Carrière, Rev. Hort. 1869: 377. 1869.

Ligustrum brachystachyum Decne., Nouv. Arch. Mus. Hist. Nat. Ser. 2, 2: 34. 1879.

Shrubs 1–3 m. **Branchlets** below the inflorescence minutely puberulent to hirtellous in 2 lines, or evenly puberulent to hirtellous proximally and distally. **Leaves** half evergreen to evergreen; blades narrowly elliptic, rhombic-elliptic, oblanceolate-elliptic to obovate-elliptic, oblanceolate, or narrowly obovate, mostly commonly broadest slightly above the middle, often slightly falcate, (1.5–)2–4.5(–5.5) cm x 5–15(–25) mm, glabrous or rarely puberulent along the abaxial midvein, primary lateral veins 2–4(–5) pairs, very rarely (5–)6–8(–9) pairs, abaxial midvein not covered by epidermis, apex usually acute but obtuse to rounded or slightly retuse in broadest blades, margins glabrous. **Inflorescence** terminal on stiffly spreading, narrowly cylindrical lateral branches, 4–15(–22) cm, less commonly with sessile flowers on short branches spreading from a central axis and the whole inflorescence appearing narrowly pyramidal and terminal, 8–20 cm. **Flowers** sessile to subsessile, usually in verticil-like clusters along the inflorescence axis, pedicels 0–0.5(–1) mm, puberulent; calyx glabrous; corolla tube ca. equal the lobes. **Drupes** obovoid or ellipsoid to subglobose, 4–7(–9) mm; seeds 1–2, endocarp stony, with several longitudinal channels. $2n = ?$ **Waxy-leaf Privet**

Flowering May–Jul. Fencerows, lots, waste areas, roadsides, deciduous woods, woods edges, thickets, creek banks; 10–300 m; Ark., Fla., Md., Miss., N.C., Okla., Tex., Va.; native to China.

Ligustrum quihoui is recognized by its stiffly spreading branches, narrowly cylindrical inflorescence branches with flowers in

verticil-like clusters, and relatively thick, deep green, rhombic-elliptic to oblanceolate-elliptic or obovate-elliptic leaves. It is not often misidentified. At least in Travis, Tarrant, and Dallas counties, Texas, it is an extremely aggressive colonizer capable of forming dense thickets.

First records for the species naturalized in Mississippi and Oklahoma are recorded here:

Mississippi. Pike Co.: beside US Hwy 98 at McComb, 20 Jun 1969, *R.D. Thomas 14179* (NLU).

Oklahoma. Cleveland Co.: [Norman], Sutton Urban Wilderness Park, edge of larger lake, edge of low woods, common, 5 Jun 1996, *Folley 1830* (OKL). The **Arkansas** record is documented here: Pulaski Co.: Allsopp Park -- south unit, naturalized in mixed pine-oak-hickory forest on shale and sandstone substrate, especially along trails, *T. Witsell 03-0007* with J. Peck (UARK). Good photos of Arkansas plants of *Ligustrum quihoui*, as well as other privets, are shown by Serviss (2009).

4. *Ligustrum sinense* Lour., Fl. Cochinch. 1: 19. 1790.

Shrubs 1–3(–6) m, aggressively colonial from root sprouts. **Branchlets** minutely hirtellous to hirsutulous or substrigose with straight or upcurved hairs sometimes of uneven length. **Leaves** half evergreen to evergreen; blades broadly elliptic or ovate-elliptic to oblong-ovate, elliptic-lanceolate, or suborbicular, (1.5–)2–4 cm x 10–20 mm, glabrous except for sparsely hirsutulous to puberulent abaxial midvein, sometimes minutely and indistinctly hirtellous adaxially, primary lateral veins (3–)4–5 pairs, abaxial midvein not covered by epidermis, apex obtuse to rounded or retuse, margins glabrous to glabrate. **Inflorescence** diffuse and open-pyramidal, 4–11 cm, usually numerous on lateral branches commonly leafless or few-leaved at base, flowering lateral branches interspersed with non-flowering branches. **Flowers** pedicellate, pedicels 1–5 mm, glabrous; calyx glabrous to sparsely puberulent; corolla tube slightly shorter than lobes, usually barely exerted from the calyx tube. **Drapes** subglobose to obovoid, (4–)5–7 mm; seeds 1, endocarp stony, not channeled. $2n = 46$. **Chinese Privet**

Flowering Apr–May(–Jun). Open and shaded disturbed areas, fencerows, river and stream floodplains, bottomland forests, lake shores, swamp and marsh edges, upland hammocks, pinelands; 10–300 m; Ala., Ark., Conn., Fla., Ga., Ky., La., Md., Mass., Miss., Mo., N.J.,

N.C., Okla., R.I., S.C., Tenn., Tex., Va.; native to China, Vietnam, and Laos; introduced also in West Indies, Mexico (Veracruz), Europe, Africa, Indian Ocean Islands, Australia, Pacific Islands.

At least in North Carolina and Missouri, some plants identifiable as *Ligustrum sinense* have with elliptic-lanceolate leaf blades with acute apices and mostly terminal inflorescences, apparently lacking the numerous lateral flowering branches. Vestiture on these plants is characteristic of the species elsewhere. In Louisiana and Texas, some populations produce leaves variably broadly to narrowly elliptic (tapering at both ends) and that also are variable in thickness.

Following Hao and Zhang (1993), Chang et al. (1996) recognized 8 varieties of *Ligustrum sinense* based on variation in vestiture, leaf shape and other foliar features, and position and leafiness at base of the inflorescence. The biological reality of these taxa is not clear, however, since all except var. *coryanum* (W.W. Smith) Hand.-Mazz. appear to be sympatric with the widespread var. *sinense*. Plants in the USA appear to have a mixture of features characterizing var. *myrianthum* (Diels) Hoefker (panicles axillary or rarely terminal, not leafy at base, or rarely leafy; leaf veins usually not sunken adaxially; calyx glabrous) and var. *sinense* (branchlets and inflorescence rachis usually densely pubescent or pilose; leaf blades ovate to oblong or suborbicular, sparsely pubescent or glabrescent abaxially).

5. *Ligustrum vulgare* L., Sp. Pl. 1: 7. 1753.

Shrubs 1.5–5 m. **Branchlets** glabrous to evenly and minutely hirtellous to hirsutulous with straight to upcurved hairs of relatively even length. **Leaves** half evergreen to evergreen; blades elliptic-lanceolate to elliptic-ovate, 3–5.5(–6) cm x 10–25 mm, glabrous except for the abaxial midvein sometimes with a few scattered hairs, primary lateral veins 4–6 pairs, abaxial midvein not covered by epidermis, apex obtuse to acute, margins glabrous to glabrate. **Inflorescence** terminal, compactly narrowly pyramidal to broadly cylindric, 4.5–5.5 cm. **Flowers** short-pedicellate, pedicels 0.5–1 mm, minutely hirtellous; calyx glabrous; corolla tube equal the lobes or slightly shorter. **Drupes** globose, 4–6 mm; seeds 2–4, endocarp membranaceous, not channeled. $2n = 46$. **Common Privet, European Privet**

Flowering (May–)Jun–Jul. Fencerows, thickets, roadsides, disturbed sites, open woods; 50–500(–1600 in western states) m; B.C.,

Ont.; Ark., Calif., Conn., Ga., Idaho, Ill., Ind., Ky., Me., Md., Mass., Mich., Mo., N.H., N.J., N.Y., N.C., Ohio, Oregon, Pa., R.I., Vt., Va., W.Va.; native to Europe and northern Africa; introduced also in South America (Ecuador), Asia (Japan), Africa, Pacific Islands (New Zealand), Australia. The PLANTS Database also records the presence of *L. vulgare* in (eastern USA) Ala., Del., D.C., Ill., Iowa, La., S.C., Tenn., Tex., and Wis. and (western USA) Colo., Mont., Nebr., N.Mex., and Utah. In the present study, no collections of *L. vulgare* have been seen among many of the genus studied from Alabama, Louisiana, Tennessee, and Texas, and it is unlikely that the species is naturalized in those states.

6. **Ligustrum ovalifolium** Hassk., Cat. Hort. Bot. Bogor. 119. 1844.

Ligustrum japonicum var. *ovalifolium* (Hassk.) Blume, Mus. Bot.

Lugd.-Bat. 1: 313. 1850.

Ligustrum californicum Decne., Fl. Serres 22: 5. 1877.

Ligustrum medium Franch. & Sav., Enum. Pl. Jap. 2: 437. 1878.

Shrubs 2–5 m. **Branchlets** glabrous-shiny, rarely hirtellous in lines. **Leaves** half evergreen to evergreen; blades ovate to elliptic-ovate, broadly elliptic, or elliptic, 2.5–5(–6.5) cm x 15–33 mm, glabrous, primary lateral veins (2–)3–6 pairs, apex acute to abruptly acuminate, margins glabrous. **Inflorescence** subcylindric to narrowly to broadly pyramidal, 4–7 cm. **Flowers** short-pedicellate, pedicels 0.5–1 mm, glabrous; calyx glabrous; corolla tube 2–3 times longer than lobes. **Drupes** ovoid, 6–8 mm; seeds 1(–2), endocarp stony, not channeled. $2n = 22, 46$. **California Privet**

Flowering (Dec)Apr–Jul. Fencerows, thickets, roadsides, disturbed sites; 100–600 m; Ala., Fla., Ga., Ky., Md., Mich., Mo., N.J., N.C., Ohio, Pa., Tenn., W.Va., Va.; native to Japan and Korea; introduced also in West Indies (Puerto Rico), Europe, Africa, Australia, Pacific Islands (New Zealand). The PLANTS Database also records the presence of *L. ovalifolium* in Ont., Calif., Conn., Del., D.C., Mass., and Tex. The record for Ontario is from a plant apparently persisting from cultivation (fide Luc Brouillet, 2009). I have not seen a voucher from Texas and its occurrence there outside of cultivation is unlikely.

Three varieties within *Ligustrum ovalifolium* were recognized by Noshiro (1985), each restricted in native range to Japan. Var. *hisauchii* (Makino) S. Noshiro has leaves sparsely hairy along the

abaxial midvein; var. *pacificum* (Nakai) Mizushima is an insular entity with slightly larger leaves and shorter corolla tubes.

Ligustrum ovalifolium, *L. obtusifolium* and *L. tschonoskii* are the species naturalized in the USA with corolla tubes longer than the lobes. *Ligustrum vulgare* also apparently is closely related to this group, although its corolla tubes are somewhat shorter. These four species can be distinguished by the following key.

a. Branchlets glabrous, rarely hirtellous in lines, glossy; leaf blades with (2-)3-6 pairs of primary lateral veins..... **Ligustrum ovalifolium**
 a. Branchlets evenly hirsute-hirtellous or puberulent to pilosulous, dull; leaf blades with 4-8 pairs of primary lateral veins.

b. Leaf blades sparsely to moderately hirsutulous to hirsute-strigose on both surfaces, sometimes only along the veins, sometimes mostly near the margins, margins appressed-ciliate; blade apices sharply acute and usually at least slightly acuminate, rarely obtuse; inflorescence terminal.....**Ligustrum tschonoskii**

b. Leaf blades usually glabrous on both surfaces or sometimes sparsely hairy along the abaxial midvein, sometimes minutely and indistinctly hirtellous adaxially, margins glabrous; blade apices obtuse to rounded (*L. obtusifolium*) or obtuse to acute (*L. vulgare*); inflorescence terminal (*L. vulgare*) or terminal and axillary, commonly on lateral shoots (*L. obtusifolium*).

c. Blade apices obtuse to acute; branchlets glabrous to evenly and minutely hirtellous to hirsutulous with straight to upcurved hairs of relatively even length; inflorescence terminal, compactly narrowly pyramidal to broadly cylindrical

.....**Ligustrum vulgare**

c. Blade apices obtuse to rounded, sometimes slightly retuse; branchlets hirsute-hirtellous with hairs of uneven length; inflorescence terminal or terminal and axillary, commonly on lateral shoots, columnar to narrowly pyramidal

.....**Ligustrum obtusifolium**

7. *Ligustrum obtusifolium* Sieb. & Zucc., Abh. Math.-Phys. C.

Königl. Bayer. Akad. Wiss. 4: 168. 1846. *Ligustrum ibota*

var. *obtusifolium* (Sieb. & Zucc.) G. Koidzumi, Bot. Mag. (Tokyo) 40: 342. 1926.

Shrubs 2–3 mm. **Branchlets** hirsute-hirtellous with hairs of uneven length. **Leaves** deciduous to half evergreen; blades elliptic to ovate-elliptic, oblong-ovate, or elliptic-obovate, 2.5–6 cm x (8–)12–26 mm, glabrous or uncommonly sparsely puberulent to villous, primary lateral veins 4–7 pairs, abaxial midvein not covered by epidermis, apex obtuse to rounded, sometimes slightly retuse, margins glabrous to glabrate. **Inflorescence** terminal or terminal and axillary, commonly on lateral shoots, short-columnar or subcapitate to narrowly pyramidal, 1.5–5 cm. **Flowers** subsessile to short-pedicellate, pedicels (0–)0.5–2 mm, glabrous to hirtellous; calyx glabrous to hirtellous; corolla tube 1.5–3 times longer than lobes. **Drupes** subglobose to broadly ellipsoid, 5–8 mm; seeds 1, endocarp stony, not channeled.

1. Leaf blades usually sparsely villous abaxially; calyx and pedicels densely to moderately or sparsely hirtellous, occasionally nearly glabrous; corolla tube 2–3 times longer than the lobes

.....7a. **L. obtusifolium** var. **obtusifolium**

1. Leaf blades usually glabrous abaxially; calyx and pedicels glabrous to very sparsely hirtellous; corolla tube 1.5–2 times longer than the lobes.....7b. **L. obtusifolium** var. **suave**

7a. **Ligustrum obtusifolium** var. **obtusifolium**

Ligustrum obtusifolium var. *leiocalyx* (Nakai) H. Hara, J. Jap. Bot. 20: 329. 1944. *Ligustrum tschonokii* var. *leiocalyx* Nakai, Trees Shrubs Jap., 276. 1922. *Ligustrum ibota* var. *leiocalyx* (Nakai) Nakai, Trees Shrubs Jap. (prop. rev. ed.) 1: 365. 1927. *Ligustrum obtusifolium* f. *leiocalyx* (Nakai) G. Murata, Acta Phytotax. Geobot. 19: 71. 1962.

Ligustrum regelianum Koehne in Urban et al., Festschr. Ascherson 192. 1904 (non Lemoine ex Dippel [pro syn.], Handb. Laubholz. 1: 133. 1889). *Ligustrum ibota* var. *regelianum* (Koehne) Rehder in Bailey, Cycl. Amer. Hort. 2: 912. 1900. *Ligustrum obtusifolium* var. *regelianum* (Koehne) Rehder, Möller's Deutsche Gärtn.-Zeit. 14: 218. 1899.

Ligustrum obtusifolium var. *velutinum* (Blume) H. Hara, J. Jap. Bot. 20: 329. 1944. *Ligustrum obtusifolium* f. *velutinum* (Blume) G.

Murata, Acta Phytotax. Geobot. 19: 72. 1962. *Ligustrum ibota* var. *velutinum* Blume, Mus. Bot. Lugd.-Bat. 1: 312. 1850.

Leaf blades usually sparsely villous abaxially; calyx and pedicels densely to moderately or sparsely hirtellous, occasionally nearly glabrous; corolla tube 2–3 times longer than the lobes. $2n = 46$.

Border Privet

Flowering May–Jun. Fencerows, woods edges, roadsides, old home sites, disturbed sites; 100–600 m; Conn., Ill., Ky., Md., Mass., Mich., Mo., N.J., N.Y., N.C., Ohio, Pa., R.I., Tenn., Va., W.Va.; native to Japan and Korea. The PLANTS Database also records the presence of var. *obtusifolium* in D.C., Iowa, Ind., N.H., N.J., and Vt.

7b. *Ligustrum obtusifolium* var. *suave* (Kitagawa) H. Hara, J. Jap.

Bot. 20: 329. 1944. *Ligustrum ibota* Sieb. & Zucc. var. *suave* Kitagawa, Bot. Mag. (Tokyo) 48: 612. 1934. *Ligustrum obtusifolium* subsp. *suave* (Kitagawa) Kitagawa, J. Jap. Bot. 40: 134. 1965. *Ligustrum suave* (Kitagawa) Kitagawa, Neo-Lineam. Fl. Mansh., 510. 1979.

Ligustrum amurense Carrière, Rev. Hort. 1861: 352. 1861. *Ligustrum ibota* var. *amurense* (Carrière) Mansf., Bot. Jahrb. Syst. 59, 132: 65. 1924.

Leaf blades usually glabrous abaxially; calyx and pedicels glabrous to very sparsely hirtellous; corolla tube 1.5–2 times longer than the lobes. $2n = 46$. **Amur Privet**

Flowering May–Jun(–Jul). Fencerows, old home sites, disturbed sites; 100–600 m; Ill., Md., Mass., Tenn.; native to China and at least the Amur region of southeastern Russian. The PLANTS Database also records the presence of var. *amurense* in Ala., Ark., Ky., Md., Maine, N.J., N.Y., N.C., Pa., S.C., Tex., Va., and W.Va.

Chang and Miao (1986) restricted the concept of native var. *obtusifolium* to Japan, var. *suave* to China, mostly as in the key above. They noted that typical *L. obtusifolium* is variable in calyx vestiture and recognized glabrous and hairy calyces within var. *obtusifolium*. In Japan, plants of *L. obtusifolium* with glabrous calyces occur with the typical (hairy) form and were identified by Ohwi (1965) as *L. obtusifolium* var. *leiocalyx*. In Madison Co., Kentucky, calyx vestiture in *L. obtusifolium*-like plants varies from glabrate (*Taylor & Thompson 1504*, NLU) to minutely hispidulous (*Taylor & Thompson 1504*, NLU);

Taylor 1446, NLU); in Oldham Co., Kentucky, a collection has hirsute calyces (Duncan 22754, NLU).

Var. *suave* has generally been recognized at specific rank (as *Ligustrum amurense*) in the United States, differing from *L. obtusifolium* by its glabrous calyx and thicker, more persistent leaves (Bailey 1950; Hardin 1974; Gleason & Cronquist 1991). But because the density of calyx vestiture in typical *L. obtusifolium* is variable and assessment of leaf thickness usually is subjective and inconsistent, many identifications of *L. obtusifolium* and *L. amurense* probably have been confused. Chang and Miao (1986) noted that variation occurs in the Chinese populations and some plants of var. *suave* approach var. *obtusifolium* in corolla proportions and leaf vestiture.

Ligustrum amurense was treated in the Flora of China (Chang et al. 1996) as *L. obtusifolium* subsp. *suave*, because of the recognition of yet another infraspecific taxon — *L. obtusifolium* subsp. *microphyllum* (Nakai) P.S. Green (*L. ibota* var. *microphyllum* Nakai), which occurs in China, Japan, and Korea. The plants are small shrubs with leaf blades 0.8–3 x 0.4–1.3 cm and have corolla tubes 2.5 times longer than the lobes.

The status of *Ligustrum ibota* Sieb. & Zucc. of Japan and Korea is unresolved. Mansfeld (1924) treated *L. obtusifolium* and *L. ibota* as synonymous. When maintained as distinct from *L. obtusifolium* (e.g., Rehder 1940; Chang & Miao 1986; Qin 2009), *L. ibota* is said to differ in its shorter, nearly capitate inflorescence (flowers 4–8). Both species have variably hairy calyces. All or almost all of the GH collections originally identified as *L. ibota* are *L. obtusifolium*.

a. Inflorescence 1.5–5 cm long; leaf blade apices usually obtuse; corolla tubes 6–7 mm long, lobes 2–3 mm long; calyx glabrous to hirsute

.....**Ligustrum obtusifolium**

a. Inflorescence 1.5–2 cm long; leaf blade apices usually acute; corolla tubes 5–6 mm long, lobes 1.5–2.5 mm long; calyx hirsute

.....**Ligustrum ibota**

Ligustrum ibota Sieb. & Zucc., Abh. Bayer. Akad. Wiss., Math.-Naturwiss. Abt. 4(3): 167. 1846.

Ligustrum ciliatum Sieb. ex Blume, Mus. Bot. Lugd.-Bat. 1: 312. 1850.

Ligustrum ibota var. *ciliatum* (Sieb. ex Blume) Decne., Nouv.

Arch. Mus. Paris ser 2, 2: 18. 1878. *Ligustrum ibota* Sieb. ex

Sieb. & Zucc. (Verh. Batav. Gen. 12: 36. 1830, nomen nudum) is a synonym of *L. obtusifolium* (fide Rehder 1921 (p. 50); Chang & Miao 1986; Green 1995), in contrast to *L. ibota* Sieb. & Zucc. 1846. In the Flora of Japan, Noshiro (1993), treated *L. ibota* Sieb. ex Sieb. & Zucc. (including *L. ciliatum* as a synonym) as a distinct species but not *L. ibota* Sieb. & Zucc.

8. **Ligustrum tschonoskii** Decne., Nouv. Arch. Mus. Hist. Nat. Ser. II, 2: 18. 1879. *Ligustrum ibota* var. *tschonoskii* (Decne.) Nakai, Fl. Kor. 2: 89. 1911. *Ligustrum ibota* f. *tschonoskii* (Decne.) Nakai, Bot. Mag. (Tokyo) 32: 124. 1918. *Ligustrum ciliatum* var. *tschonoskii* (Decne.) Mansf., Bot. Jahrb. Syst. 59, 132: 67. 1924.

Ligustrum acuminatum Koehne in Urban & K. Graebner, Festschr. Ascherson, 201. 1904.

Ligustrum macrocarpum Koehne in Urban & K. Graebner, Festschr. Ascherson, 201. 1904. *Ligustrum acuminatum* var. *macrocarpum* (Koehne) C.K. Schneid., Ill. Handb. Laubholz. 2: 807. 1911. *Ligustrum ciliatum* var. *macrocarpum* (Koehne) Mansf., Bot. Jahrb. Syst. 59, 132: 68. 1924.

Ligustrum tschonoskii var. *glabrescens* G. Koidzumi, Bot. Mag. (Tokyo) 30: 82. 1916. *Ligustrum tschonoskii* f. *glabrescens* (G. Koidzumi) G. Murata, Acta Phytotax. Geobot. 25: 35. 1972.

Ligustrum yesoense Nakai, Trees & Shrubs Jap., 278. 1922.

Ligustrum kiyozumianum Nakai, Trees & Shrubs Jap. (rev. ed.), 376, fig. 177. 1927.

Shrubs 1–3(–4) m. **Branchlets** puberulent to pilosulous. **Leaves** deciduous to half evergreen; blades elliptic to broadly elliptic, elliptic-obovate, or ovate-lanceolate, 2–5(–6) cm x 13–30 mm, sparsely to moderately hirsutulous to hirsute-strigose on both surfaces, sometimes only along the veins, sometimes mostly near the margins, primary lateral veins (5–)6–8 pairs, abaxial midvein not covered by epidermis, apex sharply acute and usually at least slightly acuminate, rarely obtuse, margins appressed-ciliate. **Inflorescence** terminal, broadly cylindrical to pyramidal, 3–5 cm. **Flowers** subsessile to subsessile, pedicels 0–0.5(–1) mm, pilosulous; calyx glabrous; corolla tube 1.5–2 times longer than lobes. **Drupes** ovoid to globose, 6–8(–12, rarely) mm; seeds 1(–2), endocarp stony, not channeled. $2n = 44, 46$.
Tschonosky Privet

Flowering Jun–Jul. Deciduous woods; ca. 100 m; D.C.; native to Japan and Korea.

Ligustrum tschonoskii is known in North America only from the woods along the bank of Rock Creek in Rock Creek Park (Shetler & Orli 2000). Two varieties within the species were recognized by Noshiro (1985), distinguished by slight and overlapping size differences. Var. *tschonoskii* is restricted in native range to Japan; var. *kiyozumianum* (Nakai) Ohwi occurs in Japan and Korea.

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